OFFICE OF MANAGEMENT AND BUDGET
FEDERAL ENTERPRISE ARCHITECTURE - PROGRAM MANAGEMENT OFFICE
SOLUTIONS ARCHITECT WORKING GROUP

Position: CHIEF SOLUTION ARCHITECT

INTRODUCTION

The Federal Enterprise Architecture Program Management Office (FEA-PMO) was established on February 6, 2002, in accordance with direction issued by the Associate Director for Information (IT) and E-Government, Office of Management and Budget (OMB). The lack of a Federal enterprise architecture was cited by the 2001 Quicksilver E-Government Task Force as a key barrier to the success of the 24 cross-agency E-Government initiatives approved by the President's Management Council in October 2001. (Summaries of the initiatives are provided in *Appendix A* of this document.)

The FEA-PMO, in collaboration with the Federal Chief Information Officer (CIO) Council Architecture and Infrastructure Committee is responsible for developing a core set of standardized technology models to facilitate technology solutions and the development of a complete architecture (baseline, target, and transition) for each of the current E-Government initiatives.

Technical architecture solutions must: (1) conform to minimum standards, e.g., for security, integration, interoperability; (2) integrate properly with existing and planned government services; (3) utilize to the greatest extent possible open technologies; and (4) avoid vendor-specific technical architecture solutions.

STATEMENT OF DUTIES

The Chief Architect will provide oversight to multiple software development projects and will be the primary decision maker in selecting the appropriate technical architecture to be used by the projects. The Chief Architect will work with all related parties (management, end users, requirements analysts, Solutions Architects) in order to determine the objectives of each system, as well as the constraints (chronological, technical, financial). Based on the objectives and constraints specific to each project, the Chief Architect will determine the most suitable technical architecture and define the solution at a high level so that it may be used by the Solutions Architect(s) in developing the detailed technical architecture.

After providing the selection and/or approval of the technical architecture, the Chief Architect will provide technical oversight of the project to ensure that the technical architecture is designed, developed, tested, and deployed properly and according to plan. The Chief Architect will work closely with the Solutions Architect(s) assigned to each projects in order to ensure that all technical architecture requirements are adequately addressed.

The Chief Architect will engage with the selected integrator (in-house or external teams) to deliver component-based technical architectural solutions to the end-user customers.

In addition to selecting the technical architecture for each project, the Chief Architect will provide project technical oversight, work with Solution Architects to update the minimum technical standards to take into account constantly changing technologies, and network with vendor representatives and public and private sector Chief Architects in order to share information. Lastly, a significant requirement exists to advise top Information Management (IM) officials on the benefits of a component based technical architecture, and to maximize the benefit of an organization-wide technical architecture standardization policy.

The Chief Architect will participate in a variety of forums with the Solutions Architects in order to share best practices, lessons learned, constantly update the technical system architecture requirements based on changing technologies, and share knowledge related to recent and current and up-coming vendor products and solutions.

The Chief Architect will keep abreast of all current and upcoming technologies related to component based technical architectures, specifically those surrounding Open Technologies and Open Standards, J2EE, .NET, and web services. The Chief Architect will maintain a high-level of understanding through reading periodicals, magazines, and on-line media. The Chief Architect will attend and participate in a variety of conferences surrounding these technologies, and will be expected to network heavily with other Chief Architects working for the public sector as well as the private sector. The Chief Architect will develop relationships with vendors providing products and/or services in the related technologies in order to gain a forward-looking vision of the direction of the technologies.

The Chief Architect works under the administrative supervision of one of the organization's senior technology managers. The Chief Architect independently develops and modifies the objectives and boundaries of assignments according to the needs of the project. The Chief Architect independently plans, designs, and carries out studies and leads projects in coordination with other IM experts, both within and outside the organization. Completed work is considered technically and administratively authoritative, is normally accepted without significant change, and is evaluated primarily for accomplishment of mission. This position requires significant travel and interface with all levels of IM on an individual basis. As a rule, the Chief Architect is required to make decisions concerning work projects without referring the matter to his/her supervisor. Many times, the decisions will have to be made under pressure where time is of the essence in order not to delay missions of national importance.

PROFESSIONAL / TECHNICAL QUALIFICATIONS REQUIRED

1. The Chief Architect will need an exceptionally broad knowledge of technical architecture designs, infrastructures, advanced corporate information systems concepts, state-of-the-art information technology frameworks, interfaces, protocols, practices, and principles related to the myriad of IM systems including client/server and web-based applications, mainframe and distributed database systems, local area networks, and wide area networks. Additionally, the Chief Architect should have a thorough understanding of advancements in telecommunications and computer equipment, software, information architecture concepts and characteristics, open standards such as SOAP, WDSL, XML, and FTP.

2. The Chief Architect must be proficient and have experience with a variety of software technical architectures, and have a good understanding of Java 2 Enterprise Edition (J2EE) and/or Microsoft .NET. The Chief Architect must also have knowledge of web services, as well as the various protocols used throughout a web-based component-based architecture system (ex. WDSL, SOAP, XML, HTTP, etc.). The Chief Architect should have a solid understanding in object oriented design and development. It is desirable that the Chief Architect have experience with data warehouses and associated technologies (OLTP, OLAP) and have experience with managing extremely large data systems. Additionally, the Chief Architect must understand Open Technologies and Open Standards, how they can best be leveraged to solve specific technical problems, and be able to articulate to a business-oriented non-technical audience the advantages and disadvantages of using Open Technologies and Open Standards.

3. The Chief Architect must have great Systems Architecture/Engineering and Customer skills, and a driving success attitude. This will include exceptional listening, creativity, and deductive reasoning skills as well as the ability to logically process information. The ability to think clearly under pressure and to present and articulate where you are going with an idea is essential. Confidence and credibility in front of senior management and end-users is important to succeed in this role.

4. The Chief Architect will define issues and problems, plan and conduct feasibility studies, and advise top IM executives concerning long-range corporate information architecture and standards developments. Knowledge of the IM standards processes, the information systems lifecycles process, and the capability to manage large projects, including planning for IM requirements, analyzing alternatives, recommending solutions, and reviewing and establishing new or revising current policies is desirable. The Chief Architect must possess a very broad technical and managerial background to successfully handle the IM complexities involved, the very difficult schedules imposed, and analyze problems and negotiate with management, the Solution Architects, and other technical experts to implement recommended solutions for technical architecture and IM standards initiatives.

OTHER INFORMATION

1. Guidelines. Guidelines consist of the National Institutes of Standards and Technology, General Services Administration, Office of Management and Budget, Information Technology Industries Council, and American National Standards Institute regulations and standards, Federal Information Processing Standards, National Communications System Government-wide telecommunications standards (FED-STDS), Telecommunications Control Protocol/Internet Protocol Standards, Federal Acquisition Regulations, Federal Information Resources Management Regulations, DOE Technical Standards Program, Departmental IM policies, and, broadly stated technical objectives regarding the component based Technical Architecture Program. The Chief Architect interprets this guidance in relation to the organization's information architecture and standards program needs, isolates areas appropriate to further study, and devises and plans projects to define specific objectives. Established records and local personnel are frequently inadequate sources of information upon which to base the required studies. Judgment is required in developing ways of obtaining data on and evaluating the significance of issues relating to the formulation, definition, structure and currency of the information architecture including not only technology but its relationship to providing information to support critical. Most external-agency policy is general in nature with little specificity regarding the approach to be followed. Establishment of new or revised policies, standards, and guidelines on IM and or appropriate modifications to the organization information architecture based upon such general guidelines is required.

2. Complexity. The work primarily involves a depth of analysis in the technical architecture and IM standards specialty areas encompassing hardware, software, interfaces, protocols, IM practices, technology advances, user needs, and networking topologies. The work concerns a field of rapidly evolving technology, often requiring departures from established practices and integrating the efforts of other IM experts within and outside of the organization. The implementation of new IM capabilities, technical architectures, and standards are critical and must be thoroughly researched as any minor problem could have a major impact on the delivery of critical projects. Projection of technical developments and project accomplishments require coordination with key applications and specialty area IM experts nationwide. Many technical architecture problems have more than one viable solution, and many organizations have biases regarding the proper method to proceed. As a result, proposed designs often result in solutions that are opposed by other organizations requiring sensitive, sensible and extensive arbitration and negotiations with upper management of these organizations.

3. Scope and Effect. The work involves the analysis of a business requirements, and determining the most suitable technical architecture based on objectives and constraints. This individual will serve as the technical oversight manager for multiple technical projects, ensuring that the selected technical architecture is properly designed, developed, tested, and deployed. The Chief Architect will work closely with the Solutions Architect(s) assigned to each project to ensure that each project maximizes the benefits of lessons learned from similar projects, best practices, as well as to verify that the system adheres to the minimal technical architecture standards.

APPENDIX A

INITIATIVE SUMMARIES

Government to Citizen

1. Recreation One-Stop
   - Would build upon "Recreation.gov" and provide a one-stop, searchable database of recreation areas Nation wide, featuring online mapping and integrated transactions, including online campground reservations and the purchase of recreational passes, maps and other products. The project would include links to recreational opportunities provided by all levels of government.
   - Proposed Agency Managing Partner: DOI

2. Eligibility Assistance Online
   - Through a common Internet portal, citizens (with a focus on high-need demographic groups) would have an online tool for identifying government benefit programs from which they may be eligible to receive assistance.
   - Proposed Agency Managing Partner: Labor

3. Online Access for Loans
   - Would allow citizens and businesses to find the loan programs that meet their needs.
   - Proposed Agency Managing Partner: Education

4. USA Services
   - Would use best practices in Customer Relationship Management to enable citizens to quickly obtain service online, while improving responsiveness and consistency across government agencies. This initiative would enable citizens to personalize the combination of services they obtain across multiple programs and agencies in a privacy-protected environment.
   - Proposed Agency Managing Partner: GSA

5. EZ Tax Filing
   - Would make it easier for citizens to files taxes in a Web-enabled environment.
   - Proposed Agency Managing Partner: Treasury/IRS

Government to Business

6. Online Rulemaking Management
   - Would provide access to the rulemaking process for citizens anytime, anywhere. An existing "e-Docket" system will be expanded and enhanced to serve as a government-wide system for agency dockets. Other agency systems would use the system by creating "storefronts" consistent with statutory requirements for each agency under the Administrative Procedures Act. Comments would be organized using knowledge management tools to improve the quality of rules.
   - Proposed Agency Managing Partner: DOT

7. Expanding Electronic Tax Products for Businesses
   - This initiative's goals include decreasing the number of tax-related forms that an employer must file, providing timely and accurate tax information to employers, increasing the availability of electronic tax filing and modeling simplified federal and state tax employment laws.
   - Proposed Agency Managing Partner: Treasury /IRS

8. Federal Asset Sales
   - Prospective customers wold be able to find assets that they are interested in, regardless of the agency that holds those assets. Customers would be able to bid and/or make purchases electronically for financial, real and disposable assets.
   - Proposed Agency Managing Partner: GSA

9. International Trade Process Streamlining
   - Would create a single customer-focused site where new or existing exporters could be assisted electronically through the entire export process. The 20 current Web sites would be organized and accessed through a single entry point.
   - Proposed Agency Managing Partner: DOC

10. One-Stop Business Compliance Information
   - Would provide information on laws and regulations that can help users understand compliance information. It would also offer wizards and tutorials to help users determine if rules apply to them and how to proceed. To the maximum extent possible, permits would be completed, submitted and approved online.
   - Proposed Agency Managing Partner: SBA

11. Consolidated Health Informatics
   - Would provide the basis for a simplified and unified system for sharing and reusing medical record information among government agencies and their private healthcare providers and insurers. It would enable a single mechanism for making those records accessible.
   - Proposed Agency Managing Partner: HHS

Government to Government

12. Geospatial Information One-Stop
   - Would provide access to the Federal government's spatial data assets in a single location and help make state and local spatial data assets more accessible. Federal agencies would also make their planned and future spatial data activities available to state and local governments to promote collaboration and reduce duplicative efforts. Data standards developed through an intergovernmental process would result in data that can be used multiple times for multiple purposes, saving taxpayer money. It would also help empower the private sector by communicating the characteristics of a desired standardized data product.
   - Proposed Agency Managing Partner: DOI

13. E-Grants
   - Would create an electronic grants portal for grant recipients and the grant-making agencies that would streamline, simplify and provide an electronic option for grants management across the government. This effort will include the work of the 26 Federal grant-making agencies to implement the Federal Financial Assistance Management Improvement Act of 1999 (P.L.106-107).
   - Proposed Agency Managing Partner: HHS

14. Disaster Assistance and Crisis Response
   - Involves a public, one-stop portal containing information from applicable public and private organizations involved in disaster preparedness, response, recovery and mitigation. This portal would also serve as a single point of application for all disaster assistance programs.
   - Proposed Agency Managing Partner: FEMA

15. Wireless Public Safety Interoperable Communications/Project (SAFECOM)
    - For public safety officials to be effective in their daily responsibilities, as well as before, during and after an emergency event, public safety agencies throughout all levels of government, i.e., Federal, state and local, must be able to communicate with each other. This initiative would address the Nation's critical shortcomings in efforts by public safety agencies to achieve interoperability and eliminate redundant wireless communications infrastructures. At the same time, it would assist state and local interoperability and interoperability between Federal public safety networks.
    - Proposed Agency Managing Partner: Treasury

16. E-Vital
    - Would expand the existing vital records online data exchange efforts between Federal agencies and state governments.
    - Proposed Agency Managing Partner: SSA

Internal Efficiency and Effectiveness

17. E-Training
    - The vision is to provide a repository of government-owned courseware to be made available to all governments (Federal, state and local), to provide high interest and government-required training to government employees at economies of scale pricing. In addition, this would foster development of communities of practice. This initiative supports achievement of the President's Human Capital initiative.
    - Proposed Agency Managing Partner: OPM

18. Recruitment One-Stop
    - Would improve the Federal hiring process by improving the functionality of the Federal automated employment information system. It would provide job seekers with streamlined resume submission, online feedback about their status in the employment process and integration with automated assessment tools. The initiative would provide Federal employers with a searchable resume database.
    - Proposed Agency Managing Partner: OPM

Enterprise Human Resources (HR) Integrations

19. Integrated Human Resources and E-Clearance
    - Would eliminate the need for paper employee records, enable strategic decisions regarding the use of human capital and financial resources to improve agency performance and address emerging needs. It would also allow for the electronic transfer of HR data throughout the Federal sector, better protect the rights and benefits of the Federal workforce and streamline and improve government-wide reporting and data analyses. It would reduce the time required to seek and access employee and contractor security clearance information.
    - Proposed Agency Managing Partner: OPM

20. E-Payroll/HR (Payroll Processing Consolidation)
    - The vision is to simplify and unify elements of the Payroll/HR process in order to consolidate and integrate HR and payroll systems across government. This effort would provide several hundred million dollars of savings to organizations and significantly reduce future IT investments and

could foster direct privatization. This initiative supports achievement of the five dimensions of the President's Management Agenda.
- Proposed Agency Managing Partner: OPM

21. E-Travel
    - Agencies would use a common travel management system throughout the Federal government. Existing travel management resources will be consolidated and processes will be simplified for cheaper, more efficient operation.
    - Proposed Agency Managing Partner: GSA

22. Integrated Acquisition Environment
    - Agencies would begin sharing common data elements to enable other agencies to make more informed procurement, logistical, payment and performance assessment decisions. It will also allow agencies to make maximum use of E-market approaches.
    - Proposed Agency Managing Partner: GSA

23. Electronic Records Management
    - Would provide the tools that agencies will need to manage their records in electronic form, addressing specific areas of electronic records management where agencies are having major difficulties. This project would provide guidance on electronic records management applicable government-wide and will provide tools for agencies to transfer electronic records to NARA in a variety of data types and formats so that they may be preserved in for future use by the government and citizens.
    - Proposed Agency Managing Partner: NARA

Initiatives That Address Barriers to E-Government Success

24. E-Authentication
    - Would build and enable the mutual trust needed to support widespread use of electronic interactions between the public and government and across governments. This would establish a method for satisfactorily establishing 'identity,' without which the promise of E-Government will never reach its full potential. The project will establish common interoperable authentication solutions for all of the E-Government initiatives.
    - Proposed Agency Managing Partner: GSA (Infrastructure)